

# JOURNAL OF SOUND AND VIBRATION

## EDITORS

P. E. Doak (Senior)  
W. Soedel (North America)

## EDITORIAL BOARD

C. W. Bert  
H. O. Berktaý  
A. Cabelli  
B. L. Clarkson  
D. G. Crighton  
E. H. Dowell  
I. Elishakoff  
C. Gazanhes  
G. M. L. Gladwell  
M. Heckl  
D. J. Johns  
A. W. Leissa  
S. Lindblad  
D. J. Mead  
C. D. Mote  
A. Powell  
C. G. Rice  
J. B. Roberts  
D. G. Stephens  
W. Szemplinska-Stupnicka  
J. M. T. Thompson  
A. Tondl  
G. B. Warburton  
R. G. White  
G. Yamada

VOLUME 139

1990

ACADEMIC PRESS

Harcourt Brace Jovanovich, Publishers

LONDON SAN DIEGO

NEW YORK BOSTON

SYDNEY TOKYO TORONTO

ISSN 0022-460X



# CONTENTS OF VOLUME 139

Volume 139, No. 1, 22 April 1990

DAVIES, H. G. and LIU, Q., The response envelope probability density function of a Duffing oscillator with random narrow-band excitation . . . . .	1
KOTAKE, S. and TAKAMOTO, K., Combustion noise: effects of the velocity turbulence of unburned mixture . . . . .	9
LING, F. H., WANG, W. M. and MAO, R. J., Dynamic stability analysis of the geophone spurious frequency phenomenon . . . . .	21
MAIDANIK, G. and DICKEY, J., Wave derivation of the energetics of driven coupled one-dimensional dynamic systems . . . . .	31
LEUNG, A. Y. T. and FUNG, T. C., Geometrically non-linear vibration of spinning structures by finite element method . . . . .	43
LAURA, P. A. A. and GUTIERREZ, R. H., Rayleigh's optimization approach for the approximate solution of integral equations for vibration problems . . . . .	63
RASMUSSEN, K. B., Sound propagation over ground under the influence of a sound speed profile in the atmosphere . . . . .	71
DOKUMACI, E., A study of the failure of numerical solutions in boundary element analysis of acoustic radiation problems . . . . .	83
DWIVEDI, J. P. and UPADHYAY, P. C., Effect of fluid presence on the dynamic response of imperfectly bonded buried orthotropic cylindrical shells . . . . .	99
PIERRE, C., Weak and strong vibration localization in disordered structures: a statistical investigation . . . . .	111
BAZ, A. and POH, S., Experimental implementation of the modified independent modal space control method . . . . .	133
YUSTE, S. B. and BEJARANO, J. D., Improvement of a Krylov-Bogoliubov method that uses Jacobi elliptic functions . . . . .	151

## Letters to the Editor

ARI-GUR, J. and ELISHAKOFF, I., On the effect of shear deformation on buckling of columns with overhang . . . . .	165
KANAKA RAJU, K. and VENKATESWARA RAO, G., Effect of elastic foundation on the mode shapes in stability and vibration problems of simply supported rectangular plates . . . . .	170
MYERS, M. K. and HAUSMANN, J. S., On the application of the Kirchhoff formula for moving surfaces . . . . .	174

Volume 139, No. 2, 8 June 1990

LIM, T. C. and SINGH, R., Vibration transmission through rolling element bearings, part I: bearing stiffness formulation . . . . .	179
LIM, T. C. and SINGH, R., Vibration transmission through rolling element bearings, part II: system studies . . . . .	201



# CONTENTS OF VOLUME 139

HOWE, M. S., Sound produced by turbulent flow over a perforated inlet . . . . .	227
LIEW, K. M. and LAM, K. Y., Application of two-dimensional orthogonal plate function to flexural vibration of skew plates . . . . .	241
CAI, C. W., CHEUNG, Y. K. and CHAN, H. C., Uncoupling of dynamic equations for periodic structures . . . . .	253
BIRMAN, V. and LIBRESCU, L., Supersonic flutter of shear deformable laminated composite flat panels . . . . .	265
SUN, C. T., SANKAR, B. V. and RAO, V. S., Damping and vibration control of unidirectional composite laminates using add-on viscoelastic materials . . . . .	277
SALIBA, H. T., Transverse free vibration of simply supported right triangular thin plates: a highly accurate simplified solution . . . . .	289
FAIRLEY, T. E. and GRIFFEN, M. J., The apparent mass of the seated human body in the fore-and-aft and lateral directions . . . . .	299
MURATA, M., KAWADE, F., KONDO, M., TAKIGAWA, H. and SAKAMOTO, H., Effects of audiogenic hazard on fetal skeletal development in mice . . . . .	307
LIU, G. R., TANI, J., WATANABE, K. and OHYOSHI, T., Harmonic wave propagation in anisotropic laminated strips . . . . .	313
GORMAN, D. J., A general solution for the free vibration of rectangular plates resting on uniform elastic edge supports . . . . .	325
ŽITŇAN, P., Bracketing of cutoff frequencies of uniform waveguides with eccentric circular geometry by the Rayleigh-Ritz method . . . . .	337

## Letters to the Editor

AWREJCEWICZ, J. and REINHARDT, W. D., Some comments about quasi-periodic attractors . . . . .	347
THOMAS, D. R., NELSON, P. A. and ELLIOTT, S. J., Experiments on the active control of the transmission of sound through a clamped rectangular plate . . . . .	351
ERRATA . . . . .	357

## Volume 139, No. 3, 22 June 1990

SALIKUDDIN, M., Acoustic behaviour of orifice plates and perforated plates with reference to low-frequency sound absorption . . . . .	361
SALIKUDDIN, M. and BROWN, W. H., Non-linear effects in finite amplitude wave propagation through orifice plate and perforated plate terminations . . . . .	383
RAMESH, A. V. and UTKU, S., A comparison of approximate solutions for the axial free vibrations of uniform rods . . . . .	407
LIU, Q. and DAVIES, H. G., The non-stationary response probability density functions of non-linearly damped oscillators subjected to white noise excitations . . . . .	425
ROZMARYNOWSKI, B., Averaged damping in random vibrations of the Baltic drilling platform . . . . .	437

ABOUDI, J., CEDERBAUM, G. and ELISHAKOFF, I., Dynamic stability analysis of viscoelastic plates by Lyapunov exponents . . . . .	459
KHADER, N. and LOEWY, R. G., Shaft flexibility effects on the forced response of a bladed-disk assembly . . . . .	469
SMALL, J. S., Dynamic response of circular plates on elastic foundations: linear and non-linear deflection . . . . .	487
GUPTA, U. S., LAL, R. and JAIN, S. K., Effect of elastic foundation on axisymmetric vibrations of polar orthotropic circular plates of variable thickness . . . . .	503

*Letters to the Editor*

YOUNG, M. I., On lightly damped linear systems . . . . .	515
ILANKO, S. and DICKINSON, S. M., Corrigendum: The vibration and post-buckling of geometrically imperfect, simply supported, rectangular plates under uniaxial loading, part I: Theoretical approach; part II: Experimental investigation (S. Ilanko and S. M. Dickinson 1987 <i>Journal of Sound and Vibration</i> 118, 313-351) . . . . .	519
BELINSKII, B. P., Comments on "An 'Optical' theorem for acoustic scattering by baffled flexible surfaces" . . . . .	522
ANNOUNCEMENTS . . . . .	525
BOOK REVIEWS . . . . .	535
HUMAN RESPONSE TO VIBRATION . . . . .	543
INDEX TO VOLUME 139 . . . . .	547

Copyright © 1990, by Academic Press Limited

ALL RIGHTS RESERVED

No part of this volume may be reproduced in any form, by photostat, microfilm, or any other means, without written permission from the publishers.

Printed in Great Britain